

Summary of Methodological Updates and New Features

Disposition of Personal Income Prototype Statistics

December 2021

The prototype statistics released on Dec. 15, 2021, incorporate changes in methodology and include new features compared with the prototype statistics that were released in December 2020. Tables and charts featured on this webpage also have been updated to reflect these improvements. The technical document laying out BEA's methodology has also been updated to explain the details of the changes. The working paper, "Measuring Inequality in the National Accounts," has not been updated, as it still accurately reflects the context and background pertaining to the estimates.

Changes in Methodology

- 1) The strategy for allocating additional income to high-income households using IRS Statistics of Income (SOI) data has been revised. There is now an additional Adjusted Gross Income (AGI) grouping (\$200,000-\$500,000). Thus, households are now assigned to either AGI >\$500,000, AGI \$200,000-\$500,000, or AGI <\$200,000 such that the proportion of tax units in the Current Population Survey (CPS) matches those of the SOI data for those categories. This adjustment allows for a more nuanced distribution of top incomes and is more appropriate for a data series which now extends back to 2000.
- 2) The totals for Social Security, Medicare, and Medicaid have been adjusted slightly down for the proportion of likely nursing home residents, not surveyed by CPS, but receiving these benefits. The residual is then distributed equally to all CPS individuals. Previously, the NIPA totals for these items were distributed wholly to those reporting (or whose reciprocity was imputed) the benefits, which overstated them for these households.
- 3) The strategy for Medicare allocation has now been modified. It is now based on averages by state, age, and disability status as calculated from microdata from the Medical Expenditure Panel Survey (MEPS). This change was made to create a more disaggregated distribution of Medicare, as well as extend the series back to 2000. Though the MEPS data is provided privately to BEA, a crosswalk of Medicare imputations by category is available upon request.
- 4) The former strategy of using crosswalks from the Congressional Budget Office (CBO) to impute reciprocity, and subsequently values, for Medicaid, the Supplemental Nutrition Assistance Program, and Supplemental Security Income, has now been replaced with a more modern machine-learning method. As the CBO does not have a scheduled update to these estimates, we chose to construct our own model based on the same covariates. We use a Random Forest algorithm, which can model varied non-linearities in the data. Program participation probabilities are made using out-of-sample predictions to remove biases from overfitting. We then impute program income for these individuals, such that it corresponds to state-level national accounts totals. This is an important adjustment as many programs vary significantly at the state level. Overall program participation and income means are 99% correlated with CBO imputations for 2000-2018, despite having a larger

variance.

- 5) The strategy for allocation of imputed interest and dividends using the Survey of Consumer Finances (SCF) has been modified. Imputed interest and dividends are now allocated separately for defined contribution and defined benefit plans, and for retirees and non-retirees. This important change reflects the fact that defined benefit plans account for about 90% of imputed interest and dividends, but most people are currently enrolled in defined contribution plans. By disaggregating these groups, we are able to more accurately allocate these receipts to the relevant populations. Other minor changes to the SCF imputation procedure in order to reduce noise are described in the technical appendix.
- 6) While the strategy for imputing rental equivalence has not changed, the 5-year American Community Survey (ACS) Public Use Microdata files have replaced the Consumer Expenditure survey for imputations in years 2005-2019. The ACS has a significantly larger sample size and is also part of the new BEA housing estimation procedure for owner-occupied housing.
- 7) The weighting procedure has been modified such that each decile (or quintile) contains the same number of weighted, rather than sample, households in a given CPS year. This change has reduced top inequality shares slightly for some years, but better reflects inequality in the population, rather than the sample.

New Features

- 1) With the December 2021 release, the inequality statistics summarized in the newly released tables have been revised.
 - a. The former “Table 2: Decomposition of Personal Income for Households” has now been replaced with a modified version of the former “Table 3: Inequality Metrics” for each year.
 - b. A new summary table of inequality measures for all available years (2000-2019) has now been uploaded as “Table 3: Inequality Metrics for All Years.” A version of this table for equivalized-only inequality measures is available upon request.
- 2) The years 2000-2006 and 2019 have been added for the distributional measures of personal income and disposable personal income.